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## REFERENCES

- AVASTHY, P. N. & CHAUDHARY, J. P. (1963): First record of a bethylid parasite on the army worm *Pseudaletia unipuncta* Haw. *Indian Jour. Sug. Res. and Dev.* 7 (3): 192.
- BHATNAGAR, SATYA PRAKASH (1948): Studies on *Apanteles faster* (Vipionidae, parasitic Hymenoptera). *Indian J. Ent.* 10 (2): 134-203.
- CHERIAN, M. C. & ANANTHANARAYANAN, K. P. (1941): *Cirphis albistigma* H., a pest of grasses in South India. *J. Bombay nat. Hist. Soc.* 42 (3): 611-616.
- KHAN, M. Q. (1946): Life history of castor semiloopers in Hyderabad (Deccan). *Indian J. Ent.* 8 (2): 111-115.

### 23. A NEW RECORD OF ALTERNATE HOST OF ARMYWORMS

Armyworms, *Pseudaletia separata* Walker and *Cirphis loreyi* Duponchel have been reported as major pest of paddy (Fletcher 1917; Katiyar & Patel 1969). In India armyworms have been observed to feed on various other crops including maize, jowar, wheat, sugarcane (Fletcher 1917), gram, linseed and mustard (Singh & Sinha 1965). Besides these crops their occurrence has been noted on grasses, fodder and green manure crops (Ayyar 1963). Kadam & Patel (1960) described bajra and other cereals as its host plants, while Fletcher (1917) found them on 'kodon' (*Paspalum scrobiculatum*) and oats.

Apart from these, the armyworms have been found to attack timothy, flax, barley, buckwheat, rye, cranberry, some legumes and several grasses in other parts of the world.

In Raipur district of Madhya Pradesh, larval stages of both *P. separata* and *C. loreyi* have been found to feed on a weed, *Eriocaulon sexangulare*. The weed grows profusely in the paddy fields in this locality. When the weed was provided to the caterpillars of armyworms it was readily accepted by them for food. Similarly, caterpillars feeding on weeds readily migrated and normally fed on paddy plants in the laboratory. It was felt that the earlier stages of the caterpillars prefer this weed to paddy plants. Later they migrate from the weed to the crop. Large number of caterpillars were collected from this weed for laboratory studies.

*Eriocaulon sexangulare* appears to be the first record as an alternate host of *P. separata* and *C. loreyi*.

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#### REFERENCES

- AYYAR, T. V. R. (1963): A Hand Book of Economic Entomology for South India. (Rev. edn.): 152-153, 169 and 360.  
FLETCHER, T. B. (1917): Sugarcane, paddy and other cereals, grasses and fodder crops. *Rep. Proc. 2nd ent. Meet. Pusa*. 1917: 137-209.  
KADAM, M. V. & PATEL, G. A. (1960): Crop Pests and how to fight them. (Rev. edn.): 37-39.  
KATIYAR, O. P. & PATEL, R. K. (1969): *Tribolium* sp. an enemy of pupae of *Pseudaletia*. *Sci. & Cult.* 35 (9): 482.  
SINGH, M. P. & SINHA, M. M. (1965): Some cutworm pests new to Bihar. *Indian J. Ent.* 27 (1): 113-114.

#### 24. PRELIMINARY OBSERVATIONS ON USE OF 'MALARIAL "B"', A LARVICIDAL OIL IN THE CONTROL OF AQUATIC INSECTS IN NURSERY PONDS

The occurrence of notonectids, *Anisops* spp., which prey upon and destroy large numbers of young carp fry in nursery ponds, is a common menace in pond culture operations. Pakrasi (1953), while devising the method of oil emulsion treatment, has shown that mustard oil emulsified with soap solution, 50 lb. per acre as standard dose, is very useful in controlling aquatic insects in ponds. Konar (1964) has recommended DDVP as a cheap, suitable and selective toxicant for the eradication of insect predators. In India, as proposed by Pakrasi (op. cit.), mustard oil is being extensively used everywhere as an insect killer in the preparation of carp nurseries. But now on account of the high cost of mustard oil its use in oil emulsion treatment is not economical. The search for cheaper and suitable substitute for mustard oil led to the successful employment of a mineral oil during nursery preparation at the Government Fish Farm, Bhopal (M.P.). This oil is dark brown in colour and is manufactured by Indian Oil Corporation under the commercial name 'Malarial "B"', and costs only 35 Paise per litre. As the name indicates this larvicidal oil is being commonly used in antimalarial work, for controlling mosquito larvae in ponds and ditches.

With a view to judge the efficacy of this mineral oil on aquatic insects, laboratory experiments were conducted in galvanised iron tubs measuring 65×65×45 cm, with a surface water area of 0.4 sq metres. The treatment with the oil was tried in three dosages of 40, 50 and 55 litres per hectare. The dose of 50 litres per hectare was found to be satisfactory.